

OBSERVATIONS

ON

The Method of growing of Wool
in Scotland,

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AND

PROPOSALS for improving the
quality of our Wool.

In TWO LETTERS to the Com-
missioners and Trustees for improving
FISHERIES and MANUFACTURES in
Scotland.

Published by order of the said Commissioners and Trustees.

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In TWO LETTERS to the Commis-
sioners and Trustees for improving FISHE-
RIES and MANUFACTURES in *Scotland*.

GENTLEMEN,

FOR several years I heard an universal
complaint of the low price of tarred
wool; and I was satisfied, by my
own experience, that the farmers
had reason to complain; for following the
common method used by my neighbours in
smearing, I shared the same fate; and found,
that though I changed my wool-merchant,

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and carried the yearly produce of my sheep to different markets, it seldom returned more than my expence for tarring or smearing.

I was anxious to know the cause, and for this purpose applied to those who I thought had the best opportunities of knowing what quantities of wool were formerly shipped off for *France*, what at this period, and what was sent to *England*, and other markets; but I received from them very imperfect accounts, and was only told in general, that much less was exported now than formerly. I then inquired of those employed in manufacturing the wool at home, and particularly of the housewives and private families, who I soon found had the greatest share of the woollen trade. They convinced me, that the farmers and wool-growers first and principally occasioned the lessening the quantity of wool manufactured, by neglecting the proper management in smearing and washing their sheep. Some of the oldest people informed me, that they remembered the wool much better of its kind, and much less spoiled with tar, than at present.

All this led me naturally to conjecture, that the prohibition of the exportation of wool, as
it

it is generally believed, was not the only cause in this country of sinking the price; but that the farmers, finding they could impose upon the buyers, and sell tar in place of wool, began to lay their sheep with greater quantities, the value of tar being much lower than that of wool. And this trick they carried on, finding at sheep-shearing the weight greatly increased, occasioned by the moss and dirt which stuck to the fleece; insomuch that, out of a stone or 16 lb. of wool as it came from the sheep, seldom more remained, after scouring, than 8 lb. sometimes 7; and when the sheep pastured upon wild and mossy grounds, not above 6.

It cannot easily be determined who first introduced the custom of tarring; but as our forefathers, though better smearers than us, did not fully understand the loss or advantage attending the practice, I shall not take up your time with an unprofitable inquiry.

There is a tradition, and I believe there are some very old people yet alive who remember, that it was some farmers in the head of *Tweeddale* who introduced the custom of over-smearing, which, as it brought with it present profit, soon spread over the country. It

was not considered that the manufacturers would soon discover the trick, that the wool would fall to its true value, and that the merchants would go to another market.

However, that they might carry on the imposition with a shew of reason, they universally gave out, that the new method of smearing was absolutely necessary for the health of their sheep. Their children hearing this so often repeated, took it for granted; and their natural bent to follow the common practice, which they believed necessary, confirmed them in their opinion. What heightened the misfortune was, that our gentlemen then never interested themselves in matters of so low and servile a nature; and the manufacturers and merchants were easily led to believe, that the persons who were daily versant in sheep understood them best.

We have had very few whose knowledge was such, as to enable them to write on the subject: and even in *England*, where so many good laws have been made for the advancement of their woollen manufacture, none of their writers whom I have seen, give any directions for salving or tarring, though it is almost universally practised in the north of *England*,

England, and where it seems to be as necessary as in *Scotland*.

The letter to the Marquis of *Rockingham*, printed in the year 1752, intituled, *The complaints of the manufacturers, relating to the abuses in marking the sheep, and winding the wool*, naturally raises in a *Scots* reader melancholly reflections. As this paper is rare, I shall here give you the author's own words, p. 8. & 9.

“ The manufacturers of wool complain,
 “ that, for seven years last past, since the price
 “ of wool has increased, the growers have in-
 “ creased the mark of pitch and tar, by lay-
 “ ing on the sheep a greater quantity than is
 “ necessary to distinguish the property, and
 “ in some places repeating it several times in
 “ a year, for no other reason, than in order
 “ to make the fleece heavier for sale; inso-
 “ much that the tar-mark, which formerly,
 “ when clipped off, weighed, in some sorts
 “ of wool, no more than from six to eight
 “ pounds, in a pack of two hundred and forty
 “ pounds, has of late weighed from twelve to
 “ sixteen pounds; and in other sorts, the
 “ weight of the tar-mark is from six to twelve
 “ pounds, which was formerly no more than
 “ from

“ from four to eight pounds, in a pack con-
 “ taining the same quantity. This tar-mark
 “ is wound up with the fleece, and sold and
 “ paid for at the same price with the rest of
 “ the wool.

“ It is afterwards cut off by the manu-
 “ facturer; and whatever it weighs, half of
 “ it is computed to be tar, and half wool.

“ That which is tar is absolutely good for
 “ nothing: the wool incorporate with the tar
 “ is likewise so much waste, as the expence
 “ and trouble of discharging the tar from the
 “ wool exceeds the real value or worth of it:
 “ and the wool which remains where the
 “ tar-mark has been clipped off, although
 “ good wool, occasions a great loss and pre-
 “ judice to the manufacturer; because the
 “ tar-mark cannot be cut off, without short-
 “ ening the staple, which being shortened, is
 “ rendered only fit for making stuff of an in-
 “ ferior sort; whereas, had it remained in
 “ its natural length, it might have been work-
 “ ed up into a fine manufacture of great va-
 “ lue: and the difference arising from this
 “ grievance only, that is, of the price of the
 “ goods made of the short or the long staple,
 “ where the best wool is used, may be rec-
 “ koned

“ koned at no less than 20 *per cent.* which
 “ the manufacturer loses.”

This gives us a miserable idea of the present state of our wool in the southern parts of *Scotland*. The *English* complain, that in 240 lb. weight of their worst wool, 16 lb. are abused by the tar-marks; whereas we seldom find, that ours, when scoured, yields above one half of the weight taken from the sheep's back; and even that spoiled like the *English* tar-marks, by shortening the staple: besides, it is universally mixed with small pieces of pitch, of which it cannot be freed by any means yet discovered; and on which account a great part of the worst kinds will receive no dye, but those of the coarsest nature, and that with great loss of dying materials and labour.

Long before this short but valuable performance fell into my hands, I had frequently employed myself in forming conjectures of the quantity of wool yearly produced in *Scotland*, and learning the uses to which it was applied, but more particularly in trying experiments upon my own sheep, and endeavouring to prevail with my neighbours to do the same, for the improvement of the wool.

However, the observations of this author
 were

were of great service to me, as they represented, in a very lively manner, the folly of our management, and strengthened the opinion that our errors might be remedied by proper care.

To know what quantities of wool we have, that may be exported, or made up into different kinds of manufactures, and then sent abroad, or used for the clothing of ourselves at home; the best manner, in my humble apprehension, is, to consider what counties, or parts of counties, want wool; what have no more than sufficient for serving themselves; and what produce not only sufficient for themselves, but for the supply of others.

It would swell this letter to too great a bulk, minutely to point out the particulars; and as it can hardly be otherwise brought to any tolerable degree of exactness, I shall, in general, only give hints, which may be of service to those who have better opportunities and qualifications for observation.

In general, it will be allowed, that the counties on the north side of the river *Forth*, seldom produce a sufficient quantity of wool to clothe the inhabitants. For though *Aberdeen* and the neighbourhood annually export large parcels of stockings and woollen stuffs, it must

be

be remembered, that the greatest share of the wool that grows in the south is sent to that county.

The three counties of *Lothian* never produce wool sufficient for themselves; and I suppose it will be granted by those who know the country, that that part of the shire of *Stirling* on the south side of the *Forth*, the shire of *Renfrew*, with the county of *Lanark*, in which *Glasgow* and *Hamilton* are situated, labour under the same want. There may be some doubt about the quantity of wool produced in the shire of *Air*, and shire of *Galloway*; but when one comes to reflect, upon the number of inhabitants in the shire of *Air*, and the numbers of black cattle bred and fattened in the shire of *Galloway*, there will be little reason to suppose they have more in that quarter than they use themselves.

The stewartry of *Galloway*, and county of *Dumfries*, besides what they manufacture themselves, annually dispose of a considerable quantity of wool.

The shire of *Teviotdale* does the same; but if the shire of *Berwick* produces more than supplies its own inhabitants, it must be a trifle.

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Without all question, the people of *Tweeddale* and the *Forest* sell by far the greatest quantity of wool, in proportion to their numbers; but as the produce of these two counties is of the very coarsest kind, it can, in its present state, amount to very little.

From the consideration of these particulars, it will appear, that the country is of very small extent, and wild, that grows more wool than sufficient for clothing the inhabitants. For though the shires of *Dumfries* and *Teviotdale*, with the stewartry of *Galloway*, sell wool; yet a great proportion of these counties is applied to the raising of grain, and of black cattle.

To finish this observation, I am of opinion, that the centre of the wool-growing country must be somewhere near the head of *Tweeddale*; from which imagine a circle to be described, the contents of that circle, or the extent of the country which produces more wool than supplies its own inhabitants, will be found to be extremely small.

As we have adopted the methods, and followed the example of the *English*, in some few places, of laying down our grounds in good order, it is hoped, by going on in that manner, we may be able in time to feed more
sheep;

sheep; and that the species of that cattle, and their wool, will improve; nothing contributing so much to the growth of fine wool as good pasture.

On finding that the quantity is not equal to what is generally thought, we should not despair, but endeavour to improve what we have; which is certainly still of great value, and, by proper care, may be highly advanced in its quality. However, I would not here endeavour, as some inadvertently have done, to make our woollen stand in competition with our linen manufacture, which, without all doubt, is more agreeable to the genius of the people, and can be further extended, without raising the jealousy of our neighbours.

To bring about the improvement of our wool, I endeavoured to find out the methods of managing their sheep in *England*, and particularly their manner of tarring or salving: on which, you will find, our greatest dependence for the future improvement of our wool must rest; for as to the nature of the soil, quality of the air, and situation of the ground, all which have also remarkable influence, these are not at our disposal.

Upon inquiry, I found in *England* the gentlemen, as well as here, knew little of the matter, leaving to their servants the management of their sheep; and the manufacturers, either jealous of hurting their trade, or really ignorant, would, or could give very little information: only, in general, I learned, that great quantities of tar hurt both the sheep and their wool; that the more grease was mixed with the tar, the wool would be the better; that the tar-mark to distinguish property should be as small as possible; that great care ought to be taken in washing the sheep before clipping; and that no dirt should be wound up with the fleece:

That the wool cut from the sheep sent from this country to *England*, the first season after being smeared in *Scotland*, was very coarse, and sold at much the same price it does here; the second year, being salved and marked in their manner, sold from 6 to 7 shillings *per* stone, which is about double the price of the first year; and still continued to grow finer, if the sheep were young; though the sheep that thus improved in their wool, fed on commons, and other grounds covered with as coarse grass,
and

and as cold and much exposed as any of our hills.

This observation, as to the cold, may be ascertained every spring, from the time the snow continues to lie upon their hills, which is generally longer than upon ours.

On this slender information I began to make experiments; and soon found to be true what the *English* hinted with respect to the additional quantity of grease, and washing the sheep; but, till the year 1752, could find no person that could salve after their manner; when I had the good fortune to find one, who had served for some years as a shepherd in that track of high land which lies between *Yorkshire* and *Lancashire*.

It would be needless to give the whole variety of experiments I have tried, it being sufficient for our purpose to mention those that answered best.

To compare the new with the common practice, the expence of the new method with the other, the advantage which the country may expect from following the new method, the marking without tar, the manner of washing, and the profit arising from it, as well to the farmer as to the wool-merchant,

1st,

1st, I mixed 8 lb. of butter, *Scots* weight, which is equal to 12 lb. *English*, with a *Scots* pint of tar, (and you will be pleased to observe all my experiments were made with the same weight and measure); with this composition I smeared 28 sheep.

2^{dly}, I mixed 4 lb. of butter, 4 lb. of rendered tallow, and 1 pint of tar, (I am not certain whether the tar was from *Norway* or the Plantations; however this makes no great difference, as the Plantation tar has of late been much improved); with this mixture I tarred 32 sheep.

3^{dly}, After reflecting of what advantage it would be to the country, if we could with success use whale-oil in place of butter, I made up a minging or salve of the following composition: 1 pint of whale-oil, 4 lb. of tallow, and 1 pint of tar. The tallow is here used, the oil being supposed too thin of itself for smearing light. With this I got a neighbour to tar 32 sheep. It seemed to answer well; but as the sheep were sold before shearing-time, I am not so certain of the success of this, as of the two former experiments.

Besides the improvement of the wool, there is, by following any of these new methods, a considerable

considerable expence saved; which will appear from the following state.

By the first experiment, 28 sheep are smeared, with 8 lb. of butter, and 1 pint of tar. Allowing the butter to be six pence *per* lb. and the tar six pence *per* pint, which is the very highest price, the expence of tarring a sheep will amount only to $7\frac{1}{3}$ farthings.

By the second experiment, the butter, tallow, and tar, being valued at the same price, the expence of each sheep will be $6\frac{1}{4}$ farthings *per* piece.

The expence of mixing with oil in place of butter still comes cheaper, as the oil can be bought for 9 pence *per* pint. But suppose it 1 shilling, then the charge will stand thus: 1 shilling for 1 pint of oil; 4 lb. of tallow, 2 shillings, 1 pint of tar, 6 pence; 32 sheep covered, charge $5\frac{1}{4}$ farthings.

The common way of the country is, to mix 2 lb. of butter, 1 shilling, with 1 pint of tar, 6 pence; with this they generally smear 5 sheep; the expence 14 farthings *per* sheep; which is double the charge of any of the former experiments. Others mix no more than 12 lb. of butter with 8 pints of tar, and lay it on in the same proportion.

Some,

Some, it is true, cheat themselves, by mixing their salve with urine, and others by mixing it with water in which the tender branches of broom have been boiled. This extraordinary composition may have some effect, as it increases the quantity of the salve, and lessens the proportion of the tar, though I rather believe these ingredients to be hurtful in their own nature. In cold grounds, some farmers lay a pint of tar, mixed as above, upon 4 sheep, and others smear no more than 3 young sheep with that quantity.

For it is the common practice to lay the young heavier than the old; for no other reason that I can discover, than that they are stronger, and better able to withstand the bad effects of over-tarring; and the fleeces by this means come to weigh more at shearing.

Tallow is of great service in the above simple compositions, as it makes the salving firm and hard during the time of the operation; and as it should be laid or spread in the shade of the wool as small and as close to the skin as possible with one finger only, it easily rolls before, and leaves a sufficient quantity of stuff upon each part; the person employed never lifting above the size of a hazel nut at one time;

time; and except what must be kept in a small dish for immediate use, the salve should be placed in the open air, or some cool shade, to preserve it hard and firm.

If a smearer understands his business, he will tar the numbers above mentioned with the quantities specified, or even more; but if unskilful, not so many.

The stuff or salve in the common method is laid on with three fingers, or the whole hand.

In the year 1752, I tried the two first; in 1753, as I found the good effects, I followed the same practice; and added the third experiment of the oil mixed with tallow. This season I have continued the same method; and as my servants are become more expert, they smear more sheep with the same quantity than they did formerly.

I have also tried, upon my own stock, the oil and tallow; and that I might still know more of the effects of decreasing the quantity of tar, I mixed 7 lb. of butter, and 5 lb. of tallow, with 1 pint of tar; with this salving, my servants, having been ordered to do it as light as possible, covered 51 large wedders. The expence, 7 lb. of butter, 3 shillings and
C 6 pence;

6 pence; the tallow, 2 shillings and 6 pence; the tar, 6 pence; this divided by 51, the number of sheep, amounts to little more than 6 farthings *per* sheep.

The neighbourhood, when they heard of this last experiment, thought it ridiculous; but when they saw the sheep smeared, they agreed they were sufficiently covered in every part with tar; the subtilty of its nature, and the divisibility of its parts, being far beyond their conception, or indeed that of the most thinking, till they make the experiment.

It is hardly necessary to observe here the savings of materials, and the carriage, as at first view there seems to be about one half: but suppose the salving in this method to cost two thirds of the money laid out in smearing in the common way, the difference will amount to a very large sum.

The parish in which I live feeds about 40,000 sheep; suppose only a penny *per* piece saved in smearing, this will amount to 166 l. 13 s. 4 d. *Sterling*.

The saving will still be greater, if we suppose the whole country to follow this method; when it will certainly, as in like cases, lower the price of materials and carriage, which I have

have all along reckoned at the price given these two last years, when they sold at a very high rate.

Should the whale-oil come to be used, the expence will still diminish.

Till the neighbourhood saw that there was an immediate decrease of expence, few or none followed the example: however, last winter convinced those who tried the experiment, that it contributed more towards the health of their sheep than the old method, as fewer died that were smeared in the light way; and last winter and spring was the most destructive season for sheep that has happened for many years.

The storemasters disagree amongst themselves as to the very intention of smearing.

Some consider its principal use to be, the preserving the sheep from cold; others from the rains; others again the destroying of insects, or preventing, or curing the scab. They think the tar the principal ingredient in the salve; but being too hot of itself, they qualify it with butter.

They pretend various other reasons; but I am now convinced their chief design in laying on such quantities of tar is, to make their wool

weigh; which many are so honest as to acknowledge.

The principal advantage, in my humble opinion, arising from smearing with tar, is, the killing of insects, preventing the scab, or curing the sheep when infected with that distemper.

All who are acquainted with the nature of sheep know, what terrible numbers of the insects called *keds* breed upon the young in particular; and what swarms of even common maggots, in some grounds, will stick to any small hurt where the skin is broken; the flies there depositing their spawn or eggs.

The cure is as universally known, of covering the part with tar: but if this is not timely done, the maggots eat their way into the sheep's body, or even into the head, if they fix where the creature cannot rub.

For curing the scab, tar is certainly a good remedy, as it operates very quick and effectually on dogs manged to a high degree, and when no other known remedy will answer.

What may lead the farmers to say that the tar keeps the sheep warm, is, that it prevents the insects from breeding, and cures the scab; which distempers cause the sheep to rub, and
leave

leave their wool upon every bush and rugged stone. When they have thus lost their wool, they are certainly hurt with the cold, forced to leave their pasture on the open grounds for shelter, and are frequently found, when weak, with their wool twisted in bushes and briers, half dead, and sometimes, if neglected, are lost altogether.

As by these observations we see that tar is necessary, or some other cheap thing which may answer the same purpose, we should endeavour to learn how it may be applied with safety, and not hurt the sheep, or the quality of the wool; it being the cheapest, if not the only remedy known, that can be used to so great an extent,

All they who, by their employments, are obliged to handle tar, know, that if they rub their hands with a sufficient quantity of any kind of grease, it soon makes the tar lose its hold, and mixing with the grease, is easily washed off: at the same time they know, that no other thing, in common use, will have the same effect.

Wool-combers also point out the method of preserving our wool from being spoiled on the sheep's back, by their using such large quantities

quantities of oil or grease, to free it from pitch, or any other kind of nastiness.

The experiments I tried are founded upon this principle, That grease, if mixed in a sufficient quantity, is a proper lixivium, and will prevent the tar from having bad effects, and even useful in helping to remove the remains of the tar from the fleece after it is shorn; that a much smaller quantity of tar is necessary to destroy insects, and cure the scab, than is commonly used; that it keeps the sheep warm in no other way, than preventing the loss of their wool by rubbing, &c.; that the more grease that is mixed with it, the greater success it will probably have, of keeping out the cold, rain, and melted snow.

Nature seems to point out this as a remedy; as all the creatures who inhabit the northern countries, and live much in the water, and upon ice, are remarkable for the quantities of fat that lies immediately under the skin, which is certainly placed there by the Author of nature, to keep out the water that might otherwise penetrate.

This should give a hint, to tar, or rather grease, the lean sheep more than the fat: but the contrary is the practice; for it is a common

mon saying, when they meet with a fat sheep, Give him a good lick of tar, he is able to bear it.

It is certain, that the tar will continue longer upon the skin, when well mixed with grease, than otherwise: for it is found, by experience, that when a small quantity is mixed with the tar, it sticks to that part of the wool to which it was first attached; this being pushed on by the young growth, it runs in knots at the ends, and is plaited and woven together to such a degree, that it cannot with profit be disintangled, by any invention yet found out, but must be cut off, as they do the mark so much complained of in *England*.

When the wool comes to stick thus together at the ends, it commonly divides, and makes a shade along the back; here the rain enters, and the snow and hoarfrost constantly lodge, and starve the sheep to death.

When sheep are smeared in the light way, the wool never runs in knots, but is always kept moist with the grease; and if care is taken, at salving, to cast the run of the shades across the back, it will seldom, if ever, divide. This precaution has never been followed except by myself and a few others.

Our

Our farmers here, as well as in *England*, neglect not the advantage of laying on great quantities of pure or unmixed tar, by way of mark; and even pretend it is designed to keep the sheep warm, and that nothing else will stand the weather, and answer the original design of distinguishing property. But nothing is more false than this: for I have found, by repeated experience, that if sheep are marked with keelstone, or red chalk, at clipping, after the fleece is cut off, it will last to *Martimas*; and if it is then renewed, when the sheep are smeared, it will continue, without any additional help, till shearing-time again; and is easily rubbed off at washing, or when the wool is scoured. It is also to be observed, that marking with keel costs no expence.

Farmers that would have their wool put up in order, should hand-wash all their sheep. This, at first, may seem a hard task to those who have great stocks; but if they will take the small trouble, to place one of their shifting-bughts that they milk their ewes in, upon a burn or river side, and make two or three men go into the water, the servants who are generally employed upon farms of that extent will easily wash a thousand in one day.

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The person who smears his sheep light, and washes his wool clean, has a great advantage over his neighbours who do not follow the same practice; as he can send his wool to the market at less expence of carriage: for as our wool at present seldom produces above one half, after scouring, the farmer, or wool-merchant, (for it is the same thing whoever advances the money), actually pays one half of the carriage for nastiness of no use; but which being forced and drawn together in a pack, and carried in hot weather, melts, and mixing with the wool, hurts it more than is generally imagined.

A fleece that is smeared with tar, well mixed with grease, will certainly be some lighter, when cut from the sheep, than that which is otherwise; but when both come to be scoured, the former will be found much heavier; nothing then remaining but the wool itself, of a finer nature, the staple longer, and consequently of higher value.

In proportion as I mixed the tar with grease, I found this, and got the higher prices for my wool; and when my neighbours last season sold their wool under 3 shillings *per* stone, I sold some of mine for 6 shillings and 6 pence;

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and

and could have sold all I had for above 6 shillings, but kept it, in order to carry my experiments a little farther.

Though the order and manner in which this is wrote may not be very acceptable, yet I hope what is said will convince you, that the future success of our woollen manufacture will much depend upon the improvement of our wool; that the bad success our manufacturers have hitherto had, is in a great measure owing to the materials, and the unskilful tarring of our sheep;

That the premiums given to manufacturers, according to the present plan appointed by the Honourable Trustees, and approved of by his Majesty, will not be sufficient encouragement, unless the wool is made better;

That it is not impossible to improve our wool, at an easy and moderate charge.

It is therefore humbly submitted, what effect it would have, to give part of the money allowed for promoting the woollen manufacture, in premiums to the farmers, who should, at certain stations, and appointed times, produce the best parcels of wool, under proper regulations, to judges appointed by the Honourable Trustees; and, at these stations, meetings

ings should be held of the farmers and wool-merchants, to make bargains for that commodity.

Though this regulation, and supposed improvement, should not for some time engage the manufacturers of our own country to extend their trade; yet the certain reformation of our wool would induce the *English* to buy from us, and thereby point out its true value to our own people.

It would also remove, in a great measure, the chief objection the farmers have to follow the new method of smearing, as the premiums given would fully pay for the supposed additional loss by the death of sheep.

In the neighbourhood where the experiments were tried, several of the farmers have followed the example; but it is not probable that this can soon become the general practice, unless promoted by public encouragement.

Tarring, in the north country, would certainly have remarkable good effects, by killing the insects, and preventing or curing the scab, to which distempers their sheep are certainly more liable than in the south; and indeed any person of knowledge would conclude this from their appearance.

If there is any thing new in this letter that can be of service, it will give me pleasure.

I am,

GENTLEMEN,

Your most obedient humble servant.

Edinburgh, Dec. 13.

1754.

P O S T S C R I P T.

The doubt that has arisen about the propriety of mixing whale-oil and tar, may be easily removed; for I know from experience, that they will mix intimately, though, being too thin of themselves for salving, an addition of a small proportion of butter, or rather tallow, is necessary to bring them to a proper firmness.

Some farmers have observed, that the *English* are not so fond of buying our young sheep that are light smeared, as those that are black with tar and dirt. This objection will be removed, in a great measure, by mixing with oil, without doing hurt to the sheep or their wool; for the oil is not so soon as other kinds of

of grease dried up by the heat of the animal; and sheep smeared in this way will be known for eight months after the operation, by the greasiness and dark colour of the fleece; and in proportion as the salve continues upon the skin, it will be granted, that the sheep will suffer the less injury from the weather. But it is a mistaken notion, that the *English* prefer sheep that are black and covered with tar, to the sheep whose fleeces are whiter and cleaner. Formerly it was the practice, to lay most tar upon those that fed upon cold and wild grounds; and it may be still the case in some places: which made the *English* farmers argue with themselves, If sheep fed on such cold and mossy grounds, and so abused with tar, look so well, what may we not expect, when we feed them on better pastures, and salve them in our manner?

Our storemasters, observing the *English* farmers reason in this way, not only smear those heavier that are intended for the *English* market; but when the sheep have the fortune to feed on dry grounds, and in a milder climate, drive them through deep miry places before they offer them to sale, to adorn them with
that

that colour they imagine the *English* to be so fond of.

However, I am sensible, could we be prevailed on to smear in the new manner, our *English* merchants, hearing of our reformation in this article, would soon alter their method of judging, and give a higher price, reasonably expecting a more than proportionable return from the change in the wool, all our year-old sheep being sold in the fleece.

Mixing with oil would bring along with it many other advantages. By saving our butter, we would have sufficient for other purposes, which has of late never been the case. It would likewise greatly promote the whale-fishing, by creating at home a new market for our oil; in return for which those employed in the cold *Greenland* seas would consume an additional quantity of our coarse woollen goods, grain, and black cattle.

In the month of *October* last, I salved 65 sheep with 1 pint of tar, mixed with 8 lb. of butter and 6 lb. of tallow; which costs something less than 6 farthings *per* piece. And to try still further what length we might with safety diminish the tar, I put 3 chopins of whale-oil into 1 mutchkin; but finding it ne-

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ver thickened, though exposed to the cold, I added 2 lb. of rendered tallow. This addition soon brought it to a proper consistence; and with it I smeared 20 sheep: which you will be pleased to observe, at the price I have rated the materials all along, is a little more than 1 penny *per* piece, and about one twentieth part of the tar generally used. They have endured the cold through winter, and are just now in as good order as any of the flock.

With a design to make others try experiments, it might be proposed what effect it would have, to use, in place of the fingers, a small brush for laying on the salve:

To smear our sheep immediately after clipping:

To smear or rub, before winter, with the same materials, our black cattle that are much exposed; it being observed, that these cattle suffer much by worms bred in their hides, and other distempers of the skin.

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L E T T E R II.

GENTLEMEN,

IN the month of *December* 1754, I gave you the trouble of a letter, containing an account of the present state of our tarred wool in the south country; the inducements which, I suppose, at first tempted the farmers to introduce so foul a practice, and their ill-grounded reasons to continue the same. I there endeavoured to show the bad consequence an improper method of tarring had in preventing the increase of our woollen manufacture, and the losses the country sustained by it. I then pointed out a method, by which, I humbly apprehend, great savings would arise in the quantity of materials used by the farmers in tarring, at the same time that the wool would be greatly improv'd, and the sheep themselves no wise hurt, but rather receive a new addition of value by better management.

To strengthen the above assertions, I gave a fair account of some experiments I had then tried, to shew, that our present method of tarring is improper, and hurts both the sheep and their wool; that one half of the expence of tarring or salving might be saved; and that
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the produce of our stocks would be greatly improved thereby.

After mentioning the above particulars, I took the liberty to hint, whether the giving of premiums, under proper regulations, to the farmers or storemasters who should be found to produce the best parcels of that commodity, would not be of great service in promoting the growth of good wool, and increase our woollen manufactures; the manufacturers having, upon all occasions, given it as a chief reason for the small advance made in that valuable branch of trade, That our wool was so spoiled with tar, that it would neither spin, dye, or dress, so as to be fit for a foreign market; or at least, to free the wool of the tar and dirt, which of necessity adhered to it, so as not to suffer in these operations, made it so expensive, that they could not go to market so cheap as the *English*, who salved or tarred their sheep after a better method.

Having the pleasure to find, that the observations made in my former letter gave satisfaction, I now venture to propose the following scheme, for encouraging the country, by premiums, to improve the quality, as well as increase the quantity of wool.

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That the sum of should be divided into twelve shares.

These are to be distributed into prizes at the following places.

New-Galloway, for the stewartry of *Kirkcudbright*.

Kilmarnock, for the shire of *Air*.

Sanquhar, for *Nithsdale*.

Moffat, for *Annandale*.

Langholm, for *Eskdale*.

Lanark, for *Clydesdale*.

Peebles, for *Tweeddale*.

Selkirk, for the *Forrest*.

Jedburgh, for the lower part of *Teviotdale*.

Hawick, for the higher part of that county.

Greenlaw or *Lauder*, for *Berwickshire*.

Haddington, for *East-Lothian*.

The above places are named, as being most convenient for situation or markets for wool, and where branches of that manufacture are carried on. However, more or fewer stations may be appointed, as shall be thought proper, or as the funds will answer.

That the encouragement given to each of these places shall be divided into three prizes, suppose

suppose 5, 3, 2 *l. Sterling* a-piece; no parcel given in to contend for a premium to contain less than 3 packs, of at least 10 stones each.

No parcel to gain above one prize, and must be all the property of one farmer, and of the year's growth in which he contends for the prize.

The above quantity is humbly proposed, as the largeness of the parcel would prevent many tricks, and private persons from gaining who kept less than 300 sheep.

That the premiums should be determined at the times when fairs and markets are held at these towns, and when the wool-merchants are supposed annually to come and buy up the produce of the neighbouring country.

That the judge or judges should be appointed by the Honourable Trustees.

Query. Might not the present riding officer be obliged and impowered to do this, and to call for the assistance and advice of others, if thought necessary?

To add the more spirit to this laudable undertaking, I would humbly propose, that a central place should be fixed on, where, after the above prizes were determined, a higher sum than any of the former should be given to the person who should produce the best pack of wool brought from any of the stations be-

fore mentioned; and that the gainers of the prizes at these out-stations, should have here again a chance given them to carry off also the principal prize, and show the improvement of their wool to merchants, &c.

The allowing one pack here to gain the prize, is intended to save carriage: but to prevent tricks, the person, after gaining any of the small out-prizes, should immediately declare his intention to enter himself a candidate for the great premium; in that case the judge there should be impowered to mark the pack agreed on, so that no change of the contents could be made without discovery.

However, if any new disputant offered, he should be obliged to produce three packs, and on the same conditions with those at the out-stations, to bring all the disputants upon the same level.

That you might have an opportunity to see the produce of the different counties, and the annual improvement, the town of *Edinburgh*, I humbly apprehend, would be the most proper place for determining this last prize or prizes, a variety of premiums tempting a greater number of candidates to try their fortune.

At the same time that the premiums were advertised, it would be proper to give the best
directions

directions to the farmers, for tarring, marking, and washing; by following which they would have the most probable chance to gain the prizes; but not to bind them down to certain rules; for that, I doubt, would have an ill effect; as they are all, or mostly so wedded to their old customs, that nothing but demonstration, repeated over and over, will make them alter their methods; and I am afraid that any thing like force would only serve to increase this obstinacy.

A meeting advertised at these fairs and markets of the farmers and wool-merchants, would greatly promote the improvement of our wool; as then the merchants of knowledge would probably come, and have an opportunity of seeing and judging themselves: whereas, at present, the wool of different farms is bought up in the same way by ignorant dealers, as the known and remarkable growths of wine in *France, &c.*; our merchants trusting more to the character the commodity bears, than to their own knowledge, in judging of the new improvements made in wool by even their own door-neighbours.

I have dwelt the longer upon this article, having found by experience, that it was much easier to improve my sheep and their wool,
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than instruct our dealers in that simple commodity: and however ridiculous it may seem, I apprehend a want of knowledge in our merchants, will be a greater bar for some time to the improvement of our wool, by not giving a reasonable price, than even the strong attachments our farmers in general have to their old customs.

Before I conclude, I must use the freedom to acquaint you, that, at last shearing-time, I had the greatest reason to be pleased with the success of the experiments I tried, in tarring my sheep the winter before; and that finding the method I followed answer my utmost expectation, I had this season so far lessened the quantity of tar used in smearing, that I have not now above one twelfth part laid upon my sheep that I had formerly, and is still practised by my neighbours who do not follow my example.

I am,

GENTLEMEN,

Your most humble servant.

Edinburgh, Dec. 18.

1755.



